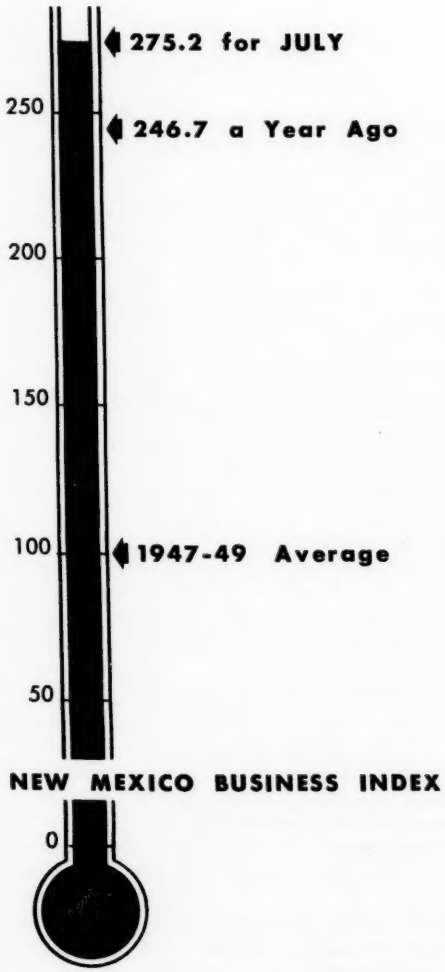
SEPTEMBER 1958

New Mexico BUSINESS



Scattered seasonal declines and continued sluggish markets for metallics in July caused the Index of Business Activity in New Mexico to slip somewhat under the June level. Even so, as the result of the over-all growth of the State's economy, July's index showed a substantial gain over that for July of 1957.

New Mexico's many-faceted mining industry was subjected to a variety of conflicting forces in July. Copper production picked up considerably, but still ran behind last year's. Lead output dropped again to about a tenth of its year-earlier figure. Zinc production was reported as zero. Potash production was down to two thirds of its July 1957 volume.

On the other hand, crude oil production showed a solid gain, despite continued low allowables, primarily because of an increase in the number of producing wells. And, although figures are not available, other information indicates that uranium production was substantially larger than a year ago. Despite such favorable developments, however, employment in mining was down sharply from July 1957.

(Continued on Page 11)

Article on New Mexico's Uranium Potential

New Mexico's Uranium Industry:

Its Probable Economic Role During the 1960-1970 Decade

By R.F. Deacon Arledge

Most people thinking and speaking of New Mexico uranium mean primarily Anaconda's "Jackpile" mine (largest in the nation) in Valencia county and the famous Ambrosia Lake mining district and its neighbors, including the San Mateo Dome, in McKinley county. Such thinking also includes the complementary mills located west and northwest of Grants. Of course, once uranium was discovered in New Mexico, there occurred a great flurry of prospecting, with small "finds" being made in various parts of the State, many of which led to limited operations. But, by and large, New Mexico uranium to date means chiefly the "Jackpile" and Ambrosia Lake.

Early Uranium Activity

In the spring of 1950 on a lava-topped butte known as Haystack Mountain owned by the Santa Fe Railroad and situated in western New Mexico, Paddy Martinez, a Navajo, discovered the first New Mexico uranium. Soon after his strike, the Santa Fe opened its Haystack Mountain mine; and then the Anaconda Company began construction of a mill at Bluewater, 10 miles west of Grants, the first mill for refining uranium ore to be built in the State. Originally, Anaconda supplied its mill with custom ores, but later brought ores almost exclusively from its own "Jackpile" mine, discovered in 1952 some 20 miles east of the volcanic cone of Mt. Taylor. This open-pit, dragline, and steam-shovel operation yields low-grade (.15%) ore, which is hauled by "gondolas" on a railroad spur and main line about 40 miles to the Bluewater mill.

Mr. Arledge is general counsel for Rio De Oro Uranium Mines, Inc., owner of the second largest U. S. uranium mine the "Dysart No. 1."

The "discovery" hole in the Ambrosia Lake area was drilled by Louis Lothman on April 17, 1955, about 20 miles west of Mt. Taylor. Mr. Lothman was president and practically the entire "field crew" of the Mid-Continent Exploration Company, and was aided by the recorded logs of an abandoned Dysart dry-hole "oil well." He worked almost alone on week ends, when he could borrow drilling equipment from fellow prospectors who were better "heeled" than he.

Rio De Oro acquired Lothman's and Mid-Continent's mining rights on the Dysart Mine on Section 11, Township 14 North, Range 10 West, under a "working interest" contract in August 1955 and immediately began sinking a shaft. Mining at the "Dysart" has now reached a depth of approximately 400 feet. This shaft-and-tunnel operation yields a good grade of ore, averaging about .20% and taken from the Westwater member of the Morrison (sandstone) formation. It is hauled by motor truck 22 miles to the Homestake-New Mexico Partners mill, in which Rio De Oro has a major interest, about three miles northwest of Grants. There the ore is refined and transformed by a carbonate leach process into the commercially saleable product known as "yellow cake." The fully automatic 750-tons-per-day mill was put on stream in February 1958 and employs about 85 persons. Rio's "Dysart" mine now produces around 1,000 tons of ore per day and employs 75 miners working in two shifts. The payroll averages approximately $10,000 a week. In 1957 Rio spent more than $600,000 on exploratory contract drilling. It appears that this young company, organized in 1955, will this year pay direct wages to New Mexico labor in excess of $1 million--a good record for a company that began with less than half a million invested capital.

Progress in the Industry

Following Rio's pioneering of the Ambrosia Lake district, major companies developed ore bodies, mines, and mills in the area. Some of those operations are just now beginning a program of capacity production. Others will not approach capacity until 1960. In other words, we can say that although production will start in some Ambrosia Lake mills this year, 1958 is--for one reason or another--primarily the year for tooling up New Mexico's uranium industry. We hope to see mines and mills in full production by the end of next year, although it is my opinion that they cannot achieve capacity production until 1960. During 1959, work at mines and mills will probably have the general quality of a "shakedown cruise": mining engineers will determine how and where to drive and drift shafts and tunnels and will determine the best production methods for each mine. Only trial and error can get all the kinks out of machinery and processes.

The uranium industry has a big advantage over most mining industries in obtaining estimates of its ore reserves and its milling capacity. A contract between the AEC and the uranium milling companies is, in my opinion, similar to a franchise contract a public service company receives from the State. The AEC, through its engineers and geologists, has--on the basis of actual drill holes--accurately estimated the uranium ore reserves of each company. The AEC has then estimated the cost of each mill and has let contracts on the theory that the producing companies would be able to supply to each mill enough ore to operate it at or near capacity. The AEC price (that is, the price the AEC will pay for "yellow cake") was then computed on a basis of amortizing the mill and allowing the miller a reasonable profit--a system almost identical with that used in fixing public utility rates.

Certain mining and production difficulties remain to be met and overcome, but the fact is that in three short years more than $100 million has been invested in uranium ore refining mills and mine shafts and exploration, and the industry is at last approaching the stage which can be temporarily referred to as "full production."

New Mexico uranium mills are to be supplied largely from "captive" mines. Names, daily tonnage capacities, and estimated construction costs of mills in the Grants area are given in the accompanying table.

Big Business

Assuming that by the first of January 1960 the mines and mills are operating at about 90 per cent of capacity and assuming that they continued to be so operated, around 3.5 million tons of uranium ore should be mined in New Mexico during 1960 and each year of the following decade. Before it is refined, this ore, having an average value of $20 per ton (AEC Circular #5), could produce an income of $70 million per year. The value of the finished "yellow cake" is estimated to be roughly a little less than double that of the unrefined ore. Thus, the ultimate, estimated, foreseeable annual income to New Mexico uranium producers for mined and processed uranium ore in 1960 should be around $100 million. [1]

In its latest (24th semiannual) report the AEC estimates that approximately 50 million tons of "captive mineable, commercial ore" occur in New Mexico. If the estimate is correct, mining and milling at the 1960 rate could well extend beyond 1975; that is, with the 50 million tons being depleted at about 3.5 million tons a year.

Those who want their figures technically justified may consider these facts: .20% ore is valued at $16 a ton. One ton of such ore properly refined with 90 per cent recovery will produce about four pounds of "yellow cake." New Mexico's .25% ore will produce about five pounds of "yellow cake." The AEC pays varying prices for its

[1] Alvin J. Thompson, director of the New Mexico Bureau of Mines and Mineral Resources, has also predicted that if construction and production continue as planned, by 1960 New Mexico will be producing uranium concentrates with "an annual value of $100 million or more." (New Mexico Business, February 1958, pp. 18-19.)--Editor.

TABLE I

PRODUCTION CAPACITIES AND CONSTRUCTION COSTS OF URANIUM MILLS IN THE GRANTS AREA*

Name	Daily Capacity (In tons)	Cost of Construction (In millions)
Anaconda Bluewater	3,000	$20
Homestake-NM Partners (Rio De Oro & United Western)	750	6
Homestake-Sapin Partners (Homestake Sabre Pinon)	1,500	9
Phillips Petroleum Co.	1,725	9.5
Kermac Nuclear Fuels Corp.	3,300	16
TOTAL	10,275	$60.5

*Kerr-McGee has a 500-tons-per-day mill at Shiprock, built in 1955, which brings New Mexico totals to six mills with producing capacities of 10,775 tons.--Editor

refined product (U_3O_8), but $7.40 per pound is probably a fair average. We may, therefore, reasonably expect a refined ton of New Mexico ore to be worth from $30 to $40. Even at $30 a ton, ore milled at a capacity of 10,000 tons per day should in 360 days produce $108 million or more if the grade holds up.

I have used the estimates 10,000 tons and $300,000 per day. Millard Hunsley, writing in the Albuquerque Journal of August 1, 1958, used 8,000 tons and something more than $160,000 a day. Mr. Hunsley, however, was talking about figures as of January 1959. A steady monthly increase is expected by uranium men, until full capacity is reached by 1960. Mr. Hunsley also was not including in his totals the great Anaconda mill with its capacity of more than a million tons a year. Accordingly, our independent estimates seem actually to be pretty much in accord. (We both got them by asking men who really know.)

No Ghost-Town Future for Grants

In passing, may I say that the above estimates indicate why Grants, New Mexico, is, I believe, no temporary mining camp and is entitled to full 20-year support from the F.H.A., with decent housing to be furnished those persons vital to the development of the uranium industry and to the national defense.

Forecast of Further Expansion

To the statement that uranium mining is an industry well calculated to bring New Mexico a new natural-resource product worth about $100 million a year for the next 15 years or more, I might add that our known ore reserves will probably be greatly extended, perhaps doubled, during the period. Contemplating an industry with a life expectancy of 15 years and a product value of $1.5 billion dollars gross yield, one might well say that the Infant Uranium may well develop into the Giant Uranium.

On the basis of known American economic factors, we can also anticipate that the above-named mining companies and others will spend many millions of dollars each year in exploratory and developmental work. Miners and producers should find new and attractive economic advantages to be gained from improving the grade of ore they deliver to the mills.

Regarding exploration--if 50 million tons of uranium ore were found and proved in one intensive three-year drive--as they were--is there not reason to believe that an additional 50 million tons can be discovered and "proved up" during the next five years? or the next 10? One thing seems certain from a glance at the maps--the work of prospecting, drilling, exploring, and developing uranium ore reserves in New Mexico has only begun. It would be indeed unreasonable to suppose that from this day forward all holes will be dry, all electrologs will be negative, all Geiger counters will remain silent above our landscape, all probes will go unrewarded in new drill tests for radioactivity. No geologist or petroleum producer or miner worthy of the name would make such dire predictions. Since incidents and experiences of petroleum geology and uranium geology are proving quite similar, can we not expect our proved uranium ore reserves to mount annually in the same manner in which the growth of American petroleum reserves was graphed?

TABLE II

PURCHASES OF URANIUM CONCENTRATES
Grand Junction, Colorado
January - June, 1958

Month	Tons of U_3O_8	Value*
January	880	$ 16,438,400
February	813	15,186,840
March	880	16,438,400
April	1,030	19,240,400
May	1,120	20,921,600
June	1,033	19,296,440
TOTAL	5,756	$107,522,080

*At average of $9.34 per pound

Source: AEC, Release No. 219, September 23, 1958

Other Values

If I have convincingly pointed to a new natural-resource gross income of $100 million per annum which seems likely to feed New Mexico coffers during the next decade, I should now like to consider the value of the mining and processing of uranium in other terms--terms like energy, power, or--if you will--simple B.T.U.'s.

Dr. Hertzog of the Texas Company pointed out in a recent address that the energy value of one ton of uranium ore equals that of 20 barrels of crude oil. In which case, our 50 million tons of uranium ore are the equivalent of one billion barrels of oil. That's a lot of oil, and with oil at $3 a barrel, that's a lot of money. If we in this state mine and process, as we reasonably expect to, 3.5 million tons of uranium ore in 1960, we will have produced the energy or power equivalent of 70 million barrels of oil.

About a century ago wood supplied more than 80 per cent of the energy consumed by the U.S. Coal became America's principal fuel about 1890 and was not surpassed in importance until oil and gas outdistanced it about 1945. Oil and gas, then, have been our principal sources of power and energy for only some 15 years. As time goes by, coal is likely to be used more and more for the production of chemicals and other products and less and less to produce energy. It seems safe and sensible to assert that uranium will be the future's principal source of power and energy. There simply is not enough water power or water resources in the entire world to supply us with enough hydroelectric plants to supply--in turn--civilization's great and growing need for power.

Uranium's Place in New Mexico's Economy

I have said that in 1960 New Mexico may well produce a power or energy potential equal to that of 70 million barrels of oil, or--in other words--oil worth $210 million. But big figures sometimes lose both meaning and impact because of their very size; so let us compare the potential 1960 uranium industry with other segments of this state's economy. First, with agriculture in New Mexico. Last year the value of livestock produced in this state was around $126 million; obviously, then, uranium is fast becoming an industry as big as our well-established and traditional livestock industry. The 1957 value of New Mexico farm products, including cotton and corn, was about $90 million. In importance to the State, uranium will probably surpass farming within this very year of 1958.

Another interesting comparison can be drawn by stacking up the uranium industry alongside New Mexico's very substantial highway-construction programs. Senator Dennis Chavez recently pointed out that there was available for 1957 highway construction in this state about $45 million, and that the figure will jump to about $118 million per year in 1959 and 1960. These annual figures are not impressively greater than the expected value of our uranium production for those same years. If you want to consider this highway program as capital investment in New Mexico, as it really is, then another parallel can be drawn which sets side by side this capital investment and the $100 million investment made by uranium people during three short years.

TABLE III

U. S. URANIUM ORE RESERVES
(Measured, Indicated, and Inferred)
June 30, 1958

Location	Thousand Tons	Per Cent of Total	Per Cent of U_3O_8
NEW MEXICO	52,800	67.3	0.26
Wyoming	11,100	14.1	0.30
Utah	5,100	6.5	0.36
Colorado	3,700	4.7	0.29
Arizona	1,400	1.8	0.32
Washington, Oregon, and Nevada	2,000	2.5	0.23
North and South Dakota	600	0.8	0.26
Others (Texas, California, Montana, Idaho, Alaska)	1,800	2.3	0.23
TOTAL	78,500	100.0	0.27

Source: AEC, Release No. 219, September 23, 1958

To use yet another industrial comparison: last year's total value of all New Mexico mineral production, including gas and oil, has been set by the U.S. Bureau of Mines (in a recent revised report) at $551.5 million. Of this amount, oil accounted for about $283 million and natural gas for about $68 million. In other words, the value of uranium output should by 1960 equal nearly one fifth of all 1957 mineral production in New Mexico.

I should like to point out yet another significant relationship between uranium and our general economy, a relationship emphasizing an important difference between the uranium industry and those of petroleum and agriculture. In fiscal 1956-57, the New Mexico petroleum industry produced approximately 95 million barrels of oil, with a dollar value of about $83 million (at around $3 a barrel). That oil was produced, however, with very little proportionate labor expense--that is to say, comparatively small payrolls to be fed into the State's general economy. By contrast, to produce refined uranium worth $100 million (3.5 million tons at $30 each) would require--in miners' wages alone--the expenditure of an enormous amount of money, which would move almost directly into the economy as a whole.

No comparison of 1960 uranium with 1957 petroleum is entirely just, of course. Although a steady annual increase in our uranium production is anticipated, by the same token, our petroleum geologists will not be merely twiddling their fingers. They are not drilling many dry holes in the Four Corners area these days; and 1958 figures, which will include data on all Bisti Dome and adjacent fields, are sure to show tremendous increases in the value of crude oil and natural gas produced in the State. Both industries are growing by leaps and bounds, but many uranium leaders feel that at least some of those in the petroleum and gas industry have underrated uranium operations as a basic New Mexico industry, and uranium people wish that the new industry could be accepted for what it is--an important addition to the New Mexico mining and economic scene.

Uranium Headaches

In this effort to effect an introduction to the fact that uranium mining represents a great, new industry for this state (even though its present dollar contribution is still less than half that of the great petroleum industry), I do not want to paint a too-rosy picture drawn with slide rule and armchair figures. Uranium mining is hard work in every aspect of the business. The hazards of the venture capital, the hazards of underground mining, the hazards of ore bodies "petering out" are but a very few of the risks, business and personal, connected with uranium operations.

Producing 10 tons of uranium a day usually requires--in a good, well-run mine--the services of about 1,000 miners and, according to careful estimate, 850 employees at the mills, plus scores of executives, accountants and clerical personnel, and even lawyers. Although production costs in some shallow "dry" mines may be comparatively low, some of the deeper mines may have to be operated at an economic loss, with companies depending upon mill profits for operating capital.

Also, uranium market problems are more hazardous than those of oil and gas men, who shy from federal control, for our only customer is by law the United States Government. All mill contracts as well as the price of our product will have to be re-negotiated in 1962 and/or in 1966. Even where the AEC has contracted to buy $100 million or more per year of refined New Mexico uranium during the next five or six years, producers are still at the mercy of each annual Appropriations Act. For, although the AEC can contract, Congress must provide the money for uranium production. The Uranium Institute of America constantly sounds the alarm. Through its president, General Jess Larson, it told the Senate last August that funds voted by the House were entirely inadequate to meet the needs of sustained production.

TABLE IV

MINERAL PRODUCTION IN NEW MEXICO[a]
1957

Mineral	Quantity (in thousands)	Value (in thousands)
Barite (tons)	4	$ 98
Beryllium concentrate (gross weight, tons)	29[b]	15
Clays (tons)	33	83
Coal (tons)	137	829
Columbium-tantalum concentrate (pounds)	866[b]	1
Copper (recoverable content of ores, etc.; tons)	67	40,618
Gem stones (tons)	(c)	30
Gold (recoverable content of ores, etc., troy ounces)	3	112
Helium (shipments, cubic feet)	89,001[d]	1,197[d]
Iron ore (usable; long tons, gross weight)	150[b]	1
Lead (recoverable content of ores, etc.; tons)	5	1,514
Lime (tons)	24	280
Manganese ore and concentrate (35% or more Mn; gross weight; tons)	25	2,114
Manganiferous ore and concentrate (5 to 35% Mn; gross weight; tons)	43	152
Mica		
Sheet (pounds)	2	16
Scrap (tons)	1	47
Natural gas (million cubic feet)	717,800[d]	68,200[d]
Natural-gas liquids:		
LP gases (gallons)	375,930	13,046
Natural gasoline (gallons)	309,010	19,941
Perlite (crude; tons)	187	1,568
Petroleum (crude; 42-gallon barrels)	94,759[d]	283,128[d]
Potassium salts (K_2O equivalent; tons)	2,080	77,197
Pumice (tons)	321	756
Salt (tons)	53	429
Sand and gravel (tons)	7,991	7,803
Silver (recoverable content of ores, etc.; troy ounces)	309	280
Stone (tons)	1,348	1,618
Zinc (recoverable content of ores, etc.; tons)	33	7,582
Uranium ore (tons)	1,176	20,538
Items that cannot be disclosed		2,366
TOTAL VALUE		$551,491[e]

(a)Production as measured by mine shipments, sales, or marketable production, including consumption by producers. Short tons unless otherwise indicated.
(b)Figure not in thousands.
(c)Weight not recorded.
(d)Preliminary figure.
(e)Total has been adjusted to eliminate duplication in the value of raw materials used in the manufacture of lime.
Source: U. S. Bureau of Mines, Report of August 18, 1958

Uranium is, in some respects, more like coal than like gold. Mining uranium ore at $16 to $25 per ton, when it has to be dug through shafts and tunnels from 1,000 feet or more below the surface of the ground does not sound like an overwhelmingly profitable enterprise. Neither does building a $10-million mill in order to add $10 to the value of each ton of ore by refining it sound reminiscent of a gold rush in Alaska, as some newspaper correspondents have from time to time made it out to be.

A Bright Future

Nevertheless, the industry is a healthy one with an assured future. Floyd B. Odlum, president of the Atlas Corporation, is among the many outstanding Americans forecasting such a future. In an address before the San Francisco Society of Security Analysts last February, Mr. Odlum estimated that the uranium industry should produce 20 to 30 per cent gross profit before taxes on its invested capital. Of course, the actual profit after taxes will depend upon the skill of individual geologists, mine superintendents, and metallurgists and upon the quality of individual mines, which explorers and geologists have found or must find in the first place.

Speaking again of exploration, west of Mt. Taylor lies a uranium field 100 miles long and about 15 miles wide, which contains more than 1,000 square miles--or 36,000 sections! To drill out and explore this area would cost $720 million. Each section could be roughly explored with four holes costing $5,000 each--$20,000 a section. Of course, the uranium people are not going to undertake so costly and extensive a problem alone; but undoubtedly they will spend many thousands of dollars for aid from and in cooperation with petroleum geologists during the next 10 years--those geologists who have made such excellent new discoveries in the Four Corners area and elsewhere in America. (Despite such discoveries, however, America's annual consumption of oil and gas has expanded much more rapidly than have discoveries of new reserves.)

Let us return, also, to further consideration of uranium as a source of power. In this connection, we do not think in terms of electricity alone, especially electricity generated by steam and heat. Even now, adequate reactors and atomic-powered generators can begin to compete economically with older types of electrical generators; and, as reserves of oil and gas decrease, such reactors and generators will surely be able to compete impressively. The demand for power grows continuously, and the production of uranium is pretty sure to increase substantially itself, at the same time that the production of oil and gas is declining during the coming years.

Atomic energy soon will be a principal source of general power for the American Navy, as it already is for our new submarines; and by 1975 most of the new electric generating plants under construction in the United States will, I believe, be atomic-powered plants. In like manner, we can look for an ever-widening use of uranium-produced power--perhaps in our Merchant Navy, possibly in our airplanes, and assuredly in our rockets, missiles, and space ships. However, except in the case of a few giant submarines, the use of nuclear power for ships, planes, trains, missiles, or other means of transportation has not yet passed beyond the early experimental stage.

Atoms for Peace

Of course, peace-loving Americans hope that the needs of the Defense Department for uranium for weapons will become smaller and smaller. Therefore, our real hope for a sustained uranium market lies wholly with the scientists and the engineers and their research in developing peaceful uses of the atom. We are solely dependent upon our scientists and our engineers; yet they are, I personally feel, being left far behind by the geologists and miners and entrepreneurs. Geologists and miners are finding and securing for scientists and engineers the means of producing atomic power, but the latter often seem not to be keeping abreast of the discoverers and the procurers. The fact that there are only 45 nuclear reactors now being constructed in America seems a strong indication that our economy (and, perhaps because of it, our scientists and engineers) is concentrating far too heavily upon producing temporary luxury and defense items at the expense of the power needs of the future.

The knowledge that nuclear-powered reactors can be designed to generate electricity on an economically competitive basis with those using steam generated by coal is rather recent knowledge. It is most welcome, for it reinforces the foundations of the industry in no uncertain terms. It underscores the reality of uranium and the atom as an exciting new source of the power which the whole world so badly needs. And we here in the arid Southwest hope--with General Patrick J. Hurley--that some day our scientists will learn to put this great new power to simple uses such as digging ditches, changing river channels, refining and transporting sea water to areas where it can be vitally useful.

To return briefly to one other matter already referred to, simple comparisons drawn between the cost of generating electricity and creating

power from nuclear energy and the cost of creating similar power from hydroelectric or steam-generated plants fed with coal do not tell the full story. We must always bear in mind the many thickly populated areas of this earth where no method of generating adequate electric power is available. Accordingly, U. S. economists and statesmen are now making detailed studies of and progress toward selling the product of the uranium mining industry to foreign nations, once American needs have been met.

It is a unique and an interesting problem for economist and statesman. We Americans would like to supply the world with power and, if possible, at an economic profit. At the same time, we would enjoy making further contributions toward the lifting of living standards of other peoples. We must, however, recognize the danger that the uncontrolled sale of refined uranium could result in the creation of atomic bombs in the hands of nations antagonistic to us and our way of life. This matter is, then, a real problem for our statesmen and one quite beyond the province of country lawyers, uranium miners, and average citizens.

Here in New Mexico we are concerned with the production of oil, gas, livestock, farm products, other mineral products--including uranium, coal, cement, and petroleum asphalt--and other natural resources. During this present year of 1958 the people of the State, aided by experts and laborers who have come to us recently, are meeting the challenges and enjoying the wealth of Mother Nature as presented in each of these fields. We find ourselves in a bountiful country, which is enjoying a booming economy--with only bankers, financiers, and executives really worrying about the repercussion of world events upon our portfolios.

I firmly believe that when I say that by 1960 the uranium industry will be a $100-million-a-year business in New Mexico I can be criticized only for ultra-conservatism. Allen E. Jones, executive of the AEC and manager of its Grand Junction Operations Office, estimates that uranium worth $320 million will be produced in the United States during 1960, and his estimate is the result of a careful analysis by an expert staff. That same staff has told us that New Mexico possesses about 80 per cent of all known U.S. uranium reserves. (One of the reasons behind the belief that there is enough ore in New Mexico to operate our uranium mills through 1973 or longer is the fact that the AEC has a reputation for being exceedingly conservative in its estimates concerning ore bodies.) Apparently, then, if uranium production continues during the next decade at the present level set by the Federal Government and the AEC, New Mexico's annual production by 1965 might well approach $200 million in refined uranium ore.

Senator Clinton P. Anderson is among those statesmen who worry about the market for refined uranium and about peaceful uses of the atom. He has given this advice:

"Essentially the uranium market today is tied to the weapons program because there is virtually no demand for uranium for peacetime uses. Since the weapons demand is being met, the future of the uranium market will depend increasingly upon the rate of growth of the peacetime demand, particularly if there is a cutback in weapons production at some future date. An accelerated program of atomic-power reactor construction seems to hold the best present promise for a substantial uranium market. That is one of the reasons why I have, in general, supported proposals to increase the rate of construction of power reactors.

"A recent AEC announcement that the Government would permit private sales of uranium, while pleasant to contemplate, does not constitute much. For example, it is being argued in support of Euratom that this market will provide an outlet for large quantities of uranium. However, what private concerns would be able to sell uranium to the Euratom nations and compete with the Government proposal to furnish Euratom uranium on a deferred payment plan?"

In his speech before the Uranium Institute of America last spring, Senator Anderson further stated:

"The only satisfactory long-range solution for the uranium industry would be the development of an economically competitive atomic power industry.... Uranium is still the bright spot in the mining business in America."

New Mexico's uranium men enthusiastically agree.

THE END

Total 1957 Retail Sales By Month and By County

(Revised, September 1958)

(add 1,000s)

	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Year Total
Bernalillo	$25,354	$24,294	$ 23,493	$ 26,145	$31,674	$ 30,845	$28,920	$ 27,089	$ 25,170	$ 26,043	$23,322	$ 33,393	$ 325,742
Catron	214	103	165	138	144	145	194	284	238	223	315	148	2,311
Chaves	4,912	6,089	5,407	5,559	6,090	5,800	5,983	5,356	4,945	6,557	4,801	6,288	67,787
Colfax	934	1,248	1,364	1,567	1,427	1,511	1,573	1,754	1,441	1,430	1,544	1,333	17,126
Curry	2,550	2,622	3,198	2,917	2,872	3,091	3,119	2,970	2,968	2,674	3,490	3,384	35,855
De Baca	217	362	272	362	261	334	322	368	397	368	349	346	3,958
Dona Ana	3,370	3,316	4,187	4,263	3,748	4,203	3,464	4,189	3,480	3,793	3,677	4,746	46,436
Eddy	4,789	6,399	6,471	5,337	5,928	5,975	5,420	5,328	5,106	5,286	5,069	9,154	70,262
Grant	1,632	1,729	1,988	1,802	1,853	1,906	1,534	1,919	1,606	1,593	1,988	1,872	21,422
Guadalupe	450	555	754	699	685	730	788	836	768	857	670	933	8,725
Harding	110	130	102	110	129	120	192	162	241	188	244	193	1,921
Hidalgo	475	662	696	704	579	591	602	634	491	4,056	654	601	10,745
Lea	9,468	9,679	9,785	9,912	8,747	8,443	8,870	9,259	13,388	8,129	10,912	13,708	120,300
Lincoln	467	512	617	521	752	808	936	1,132	864	705	842	726	8,882
Los Alamos	612	475	575	691	601	589	606	615	522	651	830	741	7,508
Luna	985	1,133	1,435	1,380	1,010	1,217	1,111	1,114	1,116	1,234	1,158	1,281	14,174
McKinley	1,967	3,111	2,945	2,881	2,529	3,166	2,689	3,035	2,916	2,831	3,111	2,963	34,144
Mora	116	133	140	159	111	153	185	196	181	163	253	153	1,943
Otero	2,475	2,767	2,955	2,712	2,492	3,047	2,875	3,031	2,483	2,514	2,389	3,119	32,859
Quay	1,073	1,155	1,345	1,557	1,421	1,608	1,547	1,562	1,518	1,350	1,362	1,619	17,117
Rio Arriba	1,007	911	1,156	1,150	942	1,414	1,279	1,128	1,221	1,127	1,061	1,382	13,778
Roosevelt	1,045	1,322	1,784	1,336	1,273	1,332	1,299	1,394	1,428	1,295	1,219	1,659	16,386
Sandoval	451	419	443	486	478	509	487	569	485	509	486	527	5,849
San Juan	5,250	6,205	5,910	6,833	6,265	7,194	7,599	7,786	7,324	9,142	6,972	10,295	86,775
San Miguel	1,008	1,323	1,369	1,344	1,237	1,341	1,293	1,387	1,224	1,087	1,234	1,365	15,212
Santa Fe	3,416	4,462	4,186	4,206	4,497	4,791	4,656	4,334	4,305	4,371	5,728	5,466	54,418
Sierra	462	526	579	637	509	560	435	621	543	537	555	693	6,657
Socorro	620	665	827	809	665	877	716	846	683	720	894	943	9,265
Taos	643	650	677	583	690	874	1,077	1,084	868	751	988	647	9,532
Torrance	408	417	645	725	479	628	698	724	603	589	917	647	7,480
Union	548	463	589	491	501	505	558	701	823	627	624	677	7,107
Valencia	1,650	1,698	2,033	1,911	2,156	2,193	2,323	2,283	2,974	2,451	2,968	2,927	27,567
Unallocated	8,353	7,663	16,454	13,096	5,657	13,858	6,571	11,860	11,012	11,315	4,227	7,724	117,790
Total	$87,031	$93,198	$104,546	$103,023	$98,402	$110,358	$99,921	$105,550	$103,332	$105,166	$94,853	$121,653	$1,227,033

Source: School Tax Division, N. M. Bureau of Revenue

NOTE:

Most of us are aware of the wide fluctuations in farm marketings caused largely by the fact that during some months (those in mid-summer, for example) very little produce and/or livestock is sold. An index number arrived at without adjustment for such seasonal fluctuations can be exceedingly misleading regarding relative volume of marketings during any one month. Thus, an index number expressing last June's crop marketings as a percentage of the average of all 36 months of the 1947-49 base period will read 44.7, a very low figure appearing to indicate that June 1958 was an extremely poor month. As a matter of fact, last June was a pretty good month when compared with the average of all Junes or with that of the three Junes in the 1947-49 period. Such treatment results in a June 1958 index of crop marketings of 126.6.

In contrast to past treatment, beginning with this issue such indexes (see Page 10) are adjusted so that farm marketings for each month are compared with the average marketings for that same month of the base period, rather than with the average for all 36 months of that period. The accompanying table shows how the average of each month's marketings differs from the average for the entire year. These figures are the indexes of seasonal variation and are those with which our indexes are now being adjusted. Resulting figures show better the volume of agricultural marketings relative to that of the base period.

SEASONAL INDEXES OF RECEIPTS FROM FARM MARKETINGS

	Total	Livestock	Crops
January	85.0	54.9	126.0
February	57.6	49.9	67.2
March	57.5	68.2	41.0
April	73.7	99.6	36.3
May	63.4	89.7	26.4
June	51.9	64.5	35.3
July	49.0	45.2	55.8
August	40.5	45.4	34.2
September	72.9	70.6	76.8
October	291.6	348.6	207.0
November	226.5	197.4	268.4
December	130.4	66.0	225.6

Business Activity in New Mexico

	July 1958	Year Earlier July 1957	Per Cent Change July 1958 from June 1958	Per Cent Change July 1958 from July 1957	INDEX July 1958 (Average Month 1947-49 = 100)
Index of Business Activity (1947-49 = 100)	275.2	246.7	- 0.5	+ 11.5	275.2
*Sales of Retail Stores (1,000s)	$111,010	$ 99,921	+ 6.7	+ 11.1	225.7
Apparel Stores	2,749	2,726	- 1.5	+ 0.8	138.8
Automotive Dealers	29,958	31,570	+ 4.0	- 5.1	224.2
Subsistence Stores	23,382	22,649	- 5.3	+ 3.2	202.8
Furniture and Appliance Stores	4,085	3,656	+ 6.5	+ 11.7	160.6
Building Materials Dealers	11,553	8,823	+ 17.4	+ 30.9	237.1
Other Retail Stores	39,283	30,497	+ 15.4	+ 28.8	268.4
*Sales of Amusement Establishments (1,000s)	$ 1,533	$ 1,497	- 6.3	+ 2.4	172.1
*Sales of Service Establishments (1,000s)	10,691	11,140	- 11.5	- 4.0	276.5
*Sales of Contractors (1,000s)	31,636	25,689	- 10.6	+ 23.1	462.9
*Sales of Wholesalers (1,000s)	39,827	33,954	+ 9.7	+ 17.3	197.2
*Public Utilities' and Carriers' Sales (1,000s)	11,420	11,449	- 23.8	- 0.3	244.1
*Life Insurance Sales (1,000s)	23,818	20,561	+ 16.5	+ 15.8	679.2
*Bank Debits, 36 banks (1,000s)	$451,609	$402,633	+ 4.9	+ 12.2	278.0[a]
Bank Loans and Discounts, 36 banks (1,000s)	44,112	37,217	+ 4.5	+ 18.5	257.5[a]
Demand Deposits, 36 banks (1,000s)	324,805	292,933	+ 3.5	+ 10.9	171.4[a]
Time Deposits, 36 banks (1,000s)	108,338	101,[illegible]8	+ 0.4	+ 6.6	302.5[a]
Business Failure Liabilities (1,000s)[b]	72	527	- 26.7	- 86.3	251.5
Wage Workers in Nonagricultural Establishments	219,100	211,600	+ 0.2	+ 3.5	166.3
*in Manufacturing	22,300	20,700	- 0.4	+ 7.7	224.8
in Mining	15,200	18,700	- 0.7	- 18.7	131.9
in Transportation and Utilities	19,800	20,400	+ 0.5	- 2.9	131.9
in Trade	49,300	47,300	+ 1.6	+ 4.2	166.0
in Finance, Insurance and Real Estate	8,400	7,300	- 2.3	+ 15.1	286.2
in Services and Miscellaneous	28,300	27,000	+ 1.1	+ 4.8	131.9
in Government	54,900	52,400	- 0.5	+ 4.8	192.4
in Contract Construction	20,900	17,800	- 0.5	+ 17.4	165.4
Number of Insured Unemployed	4,668	2,657	- 3.0	+ 75.7	--
Rate of Unemployment (per cent of labor force)	2.62	1.55	- 3.3	+ 69.0	168.4
*Building Permits, total 16 cities (1,000s)	$ 9,938	$ 5,677	+ 22.1	+ 75.0	394.3[a]
Residential	6,364	4,018	+ 7.8	+ 58.4	408.2[a]
Nonresidential	2,967	1,075	+ 96.3	+175.8	437.4[a]
Other	607	584	- 16.5	+ 4.0	214.5[a]
*Petroleum Production (1,000s of bbls)	8,236	7,627	+ 4.5	+ 8.0	217.1
Natural Gas Production (millions of cu ft)	55,701	55,818	+ 3.0	- 0.2	346.3
*Electric Power Production (1,000s of kwhs)	291,326	241,370	+ 13.2	+ 20.7	330.1
*Index of Total Metallics Production (1947-49 = 100)	59.4	105.5	+104.8	- 43.7	59.4
Mine Production - Copper (1,000s of lbs)	10,600	11,692	+119.5	- 9.3	100.3
Mine Production - Lead (1,000s of lbs)	120	1,214	- 41.2	- 90.1	11.6
Mine Production - Zinc (1,000s of lbs)	na	6,118	--	--	--
*Mine Production - Potash (1,000s of tons)	695	1,063	- 24.0	- 34.7	173.5
Index of All Farm Prices (1947-49 = 100)	103.8	92.8	+ 2.8	+ 11.9	103.8[c]
Index of Livestock Prices	112.1	93.6	+ 2.2	+ 19.8	112.1
Index of Crop Prices	90.9	98.4	+ 5.1	- 7.6	90.8[c]
Receipts from All Farm Marketings (1,000s)	$ 9,268	$ 6,516	+ 22.0	+ 42.2	122.7
Livestock and Products	3,661	3,512	- 1.2	+ 4.3	87.7
Crops	5,607	3,004	+ 28.4	+ 86.7	162.6

	August 1958	Year Earlier August 1957	Per Cent Change August 1958 from July 1958	Per Cent Change August 1958 from August 1957	INDEX August 1958 (Average Month 1947-49 = 100)
Bank Debits 36 banks (1,000s)	$423,537	$382,893	- 6.2	+ 10.6	260.8[a]
Bank Loans and Discounts, 36 banks (1,000s)	41,018	32,907	- 7.0	+ 24.6	239.5[a]
Demand Deposits, 36 banks (1,000s)	325,407	300,078	+ 0.2	+ 8.4	171.7[a]
Time Deposits, 36 banks (1,000s)	110,745	96,257	+ 2.2	+ 15.1	309.2[a]
Wages Workers in Nonagricultural Establishments	216,400	213,100	- 1.1	+ 1.5	164.3
Number of Insured Unemployed	4,375	2,367	- 6.3	+ 84.8	--
Rate of Unemployment (per cent of labor force)	2.47	1.37	- 5.7	+ 80.3	159.1
Building Permits, total 16 cities (1,000s)	11,603	4,773	+ 16.8	+143.1	460.4[a]
Residential	7,478	3,119	+ 17.5	+139.7	479.7[a]
Nonresidential	3,404	1,139	+ 14.7	+199.0	501.8[a]
Other	721	515	+ 18.8	+ 39.9	254.8[a]
Index of All Farm Prices (1947-49 = 100)	103.4	94.8	- 0.4	+ 9.1	103.4
Index of Livestock Prices	111.4	96.3	- 0.6	+ 15.7	111.4
Index of Crop Prices	91.3	98.0	+ 0.4	- 6.8	91.3

*Indexes for these items are used to compute the Index of Business Activity.
[a]Although the number of reporting units changes, the indexes for these items are comparable with indexes for preceding months.
[b]The figures in this series are based on the average of three months' data.
[c]Revised
na - not available

Sources:
Retail Sales data: N. M. Bureau of Revenue
Potash Production: N. M. Bureau of Revenue
Petroleum and Natural Gas Production: N. M. Oil Conservation Commission
Life Insurance Sales (New Ordinary): Life Insurance Agency Management Association
Wage Workers and Unemployment: N. M. Employment Security Commission and U. S. Department of Labor
Electric Power Production: Federal Power Commission
Metallics Production: U. S. Bureau of Mines
Farm Prices and Marketings: U. S. Agricultural Marketing Service
Bank data (all series), Building Permits: Bureau of Business Research
Business Failure Liabilities: Dun & Bradstreet, Inc.

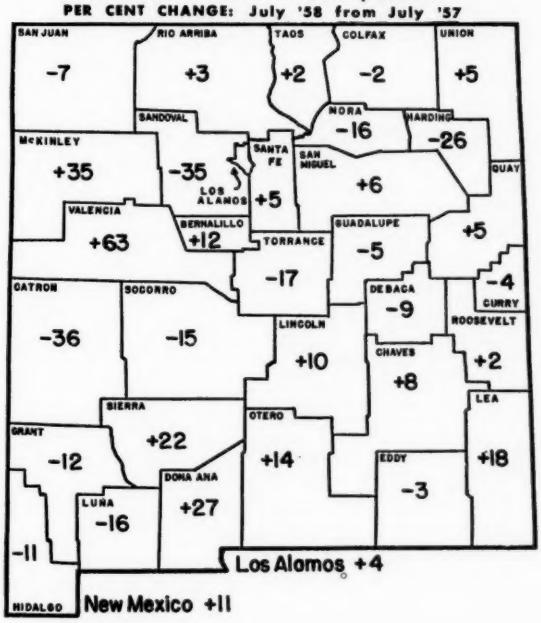
Monthly Summary (Continued from Page 1)

Among the major industries, construction provided the biggest boost to over-all business activity. It showed the largest gains in employment and in sales. The promise that construction will continue to strengthen the State's economy in 1958 is seen in the steady rise of all available indicators of construction activity. Cumulative gains for the first eight months of the year show that contracts awarded in 1958 were leading those in 1957 by 53 per cent.

Supported by rising business activity, retail sales experienced solid growth in July, although performance within the retail group was spotty. Sales by apparel stores continued to be sluggish, and automotive dealers failed to equal even their poor showing of a year earlier. But other groups did well, including furniture and appliance dealers, who recorded their fifth consecutive monthly gain in sales--a new development which may prove to be a genuine reversal of a two-year decline.

RETAIL SALES: A Comparison

PER CENT CHANGE: July '58 from July '57



Sales Activity in New Mexico Counties

July 1958

(add 1,000s)	Retail Stores							Others		
County	Apparel	Automotive	Subsistence	Furniture & Appliances	Building Material	Other	Total	Amusement Places	Service Firms	Wholesale Sales
Bernalillo	$ 1,126	$ 9,150	$ 5,992	$1,605	$ 4,806	$ 9,788	$ 32,467	$ 358	$ 4,137	$18,729
Catron	0	43	35	0	7	40	125	1	2	32
Chaves	158	1,771	1,382	187	752	2,226	6,476	142	679	2,608
Colfax	51	448	517	20	121	377	1,534	18	157	308
Curry	94	1,034	536	155	235	940	2,994	54	339	809
De Baca	0	67	81	3	30	111	292	7	22	27
Dona Ana	140	1,470	1,139	153	566	932	4,400	74	655	1,259
Eddy	152	1,333	1,459	193	554	1,568	5,259	103	551	1,621
Grant	27	331	431	44	90	421	1,344	10	124	429
Guadalupe	6	312	265	(a)	24	142	749	(a)	12	115
Harding	0	63	2	1	1	76	143	1	4	13
Hidalgo	7	225	123	1	58	124	538	11	25	124
Lea	154	1,987	1,800	265	438	5,816	10,460	122	664	1,465
Lincoln	6	217	357	11	103	331	1,025	43	68	98
Los Alamos	19	147	271	3	20	173	633	20	98	21
Luna	29	246	265	46	135	215	936	14	99	309
McKinley	60	1,320	1,064	88	279	810	3,621	73	199	1,100
Mora	0	44	20	18	13	61	156	2	6	23
Otero	84	1,087	968	135	376	616	3,266	64	232	343
Quay	37	570	463	32	145	374	1,621	24	115	465
Rio Arriba	15	414	456	26	67	342	1,320	2	61	88
Roosevelt	45	413	303	49	174	335	1,319	19	137	195
Sandoval	1	88	66	0	6	156	317	(a)	13	32
San Juan	95	2,511	1,241	266	998	1,919	7,032	109	626	1,891
San Miguel	9	326	474	7	95	462	1,373	25	100	447
Santa Fe	165	1,219	1,407	223	480	1,312	4,896	66	725	1,749
Sierra	2	159	170	12	40	146	529	18	54	60
Socorro	9	229	173	27	45	124	607	3	60	160
Taos	20	232	446	82	22	298	1,100	17	67	157
Torrance	1	268	94	18	27	168	576	4	17	46
Union	15	187	103	9	50	221	585	7	34	41
Valencia	64	1,364	746	45	233	1,345	3,797	29	173	251
Unallocated	158	683	443	359	563	7,314	9,520	93	436	4,812
Total	$2,749	$29,958	$23,382	$4,085	$11,553	$39,283	$111,010	$1,533	$10,691	$39,827

(a) Less than $1,000
Source: School Tax Division, N. M. Bureau of Revenue

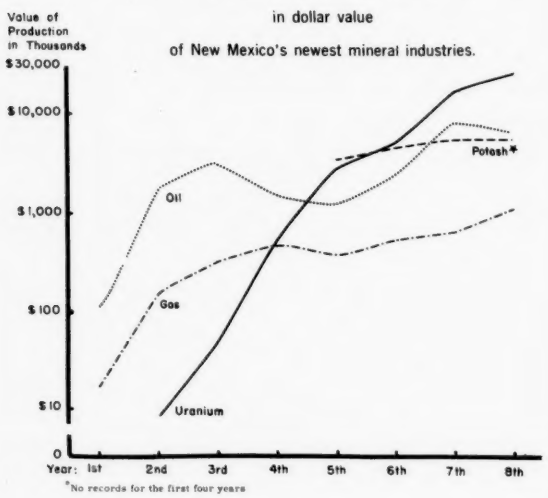
CHART-OF-THE-MONTH

During the first eight years of recorded production,

URANIUM has shown the most rapid growth

in dollar value

of New Mexico's newest mineral industries.



*No records for the first four years

Volume 11 Number 9

New Mexico Business Is Published Monthly By The Bureau of Business Research College of Business Administration
University of New Mexico, Albuquerque

Subscription Price Two Dollars Per Year

Entered as second-class matter January 31, 1949, at the post office at Albuquerque, New Mexico, under the act of August 24, 1912.

Ralph L. Edgel
Director

Vicente T. Ximenes
Associate Economist

Shirley Huzarski
Research Asst.

Arthur A. Blumenfeld
Assistant Economist

Sheila M. Fisher
Asst. Statistician

Margaret I. Meaders
Editor

Diane McCollum
Statistical Clerk

Anita S. Park
Secretary

Dolores Salazar
Stenographer

NEW MEXICO BUSINESS

Bureau of Business Research
University of New Mexico
1821 Roma Avenue, N.E.
Albuquerque, N. M.